

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**



DEP. & R. E.
Room 307
696-2501

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE MAY 23 PM 2:24
PATENT OPERATION

In re Application of:

John Brewer et al.

Serial No.: 09/493,350

Group Art Unit: 1764

Filed : January 28, 2000

Examiner : H. Tran

For : MULTI-ZONE CRACKING FURNACE

New York, NY 10036
May 19, 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**REQUEST FOR WITHDRAWAL OF NOTICE OF APPEAL AND
REQUEST FOR RECONSIDERATION**

Sir:

Applicants respectfully request that the Notice of Appeal filed on March 1, 2003, in response to the non-final Office Action that issued December 3, 2003, be withdrawn. The Notice of Appeal was filed in error in response to the non-final Office Action. Applicants request a refund of the Notice of Appeal fee at this time.

Applicants submit herewith, a Request for Reconsideration in response to the Office Action dated December 3, 2003 regarding the above-identified application. It is respectfully requested that the Examiner consider the following remarks:

I hereby certify that this correspondence is being deposited
with the United States Postal Service as first class mail in
an envelope addressed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

on May 19, 2004

Alan B. Clement, Reg. No. 34,563

Application No. 09/493,350
Request for Reconsideration dated May 19, 2004
Response to Office Action of December 3, 2003

696-250
STATUS: NO ENTRY
SEARCH

2004 MAY 23 PM 2:24

REMARKS

In the Office Action, the Examiner rejected Claims 1, 3, 5 and 9-10 under the provisions of 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under the provisions of 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 2,323,498 to Thompson.

Reconsideration is respectfully requested.

The present invention is directed to a furnace for cracking at least two hydrocarbon feedstocks to produce olefins, having at least one fired radiant chamber that is divided into at least two separate independent radiant zones by a dividing means. The furnace comprises multiple radiant chambers that have separate independent radiant zones with independent feed tubes, and wherein each independent radiant zone's temperature can be controlled independently. Moreover, the present claimed invention provides an apparatus for cracking more than one feedstock under different reaction conditions at the same time to produce an entirely different olefin product slate. Applicants respectfully submit that the claimed invention is novel and unobvious over the applied art.

Applicants acknowledge that Thompson `498 describes a combination radiation and convection furnace for heating a stream of fluid, either in liquid, vapor or mixed phases.

However, Thompson `498 teaches the use of separate combustion zones with **one continuously connected vertical and horizontal fluid conduit** capable of reverse flow, see Thompson `498 at col. 2, lines 50-59. Applicants respectfully disagree with the Examiner contention that Thompson `498 teaches or suggests more than one **independent** process coil for each zone

Application No. 09/493,350
Request for Reconsideration dated May 19, 2004
Response to Office Action of December 3, 2003

696-250
STATUS AND EIGHT
BRANCH

2004 MAY 28 PM 2:24

capable of processing more than one feedstock at a time, as there is no suggestion of such an expedient anywhere in Thompson `498.

Importantly, the Thompson `498 reference does not expressly or implicitly provide for **separate and independent feed lines and process coils**, nor for the cracking of more than one feedstock at a time. Further, Thompson `498 does not disclose, suggest or motivate one skilled in the art to provide for an effective and efficient method for cracking more than one feed stock at a time.

Instead, Thompson describes a simple furnace capable of heating only one fluid stream that passes through a continuous series of conduits and a manifold that is shared by the separate radiant zones. In fact, Thompson **teaches away from the presently claimed invention by exposing the single inlet manifold that is a part of the continuously connected conduits that make up the "process coil," to the various conditions of each radiant chamber.** See Thompson `498 Figures 1 and 5 (wherein the "process coils" and single inlet manifold straddle both radiant zones).

Further in this regard, Applicants respectfully disagree with the Examiner's reading of Thompson `498 as having "independent coil for each zone." See Office Action, page 4, third full paragraph. The coil denoted as an "independent coil" by the Examiner, is not an independent coil at all, but instead is a continuous series of conduits connected to a single manifold. Such a configuration simply cannot separately process more than one feedstock at a time because the coils are all connected to a single manifold. Thompson `498 thereby effectively eliminates the users' ability to crack various different feeds under various conditions because the "process

coils" must contain the same feedstock fed from the common manifold. In direct conflict with the express recitations of the presently claimed invention, the "process coils" and manifold of the Thompson '498 furnace necessarily contain the same feedstock and share the conditions of both radiant chambers. Thus, separate and independent cracking for various different independent feedstocks at various conditions cannot be achieved by the cited prior reference.

Next, in item 6 of the Office Action, the Examiner rejected Claims 2, 4, 8 and 12 under the provisions of 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 2,323,498 to Thompson.

With regard to independent claim 2 and dependent claims 4, 8 and 12, Applicants respectfully submit that there is absolutely no disclosure in the Thompson '498 reference that suggests the claimed features, especially the requirement in claim 2 that at least four separate and independent hydrocarbon feeds are used to produce olefins by "providing a separate and independent process coil for directing a separate and independent hydrocarbon feedstock through each said separate and independent radiant cracking zone, and separately and independently controlling the temperature in each of said separate and independent radiant cracking zone to crack each said separate and independent hydrocarbon feedstock to olefins." There is no suggestion or motivation in the teachings of Thompson '498 regarding the cracking of more than one common feedstock, let alone the four independent and separate feedstocks called for in Claim 2. Accordingly, Applicants respectfully request that the Examiner withdraw the Section 103 rejection of Claims 2, 4, 8 and 12.

Application No. 09/493,350
Request for Reconsideration dated May 19, 2004
Response to Office Action of December 3, 2003

696-250

MAY 12 PM 2:25

In item 7 of the Office Action, the Examiner rejected Claims 6-7 and 11-12 under 35 U.S.C. § 103(a) as being unpatentable over Thompson '498 in view of Kushch et al. ('001 or '661). Because the Examiner merely relies on the Kushch et al. references to teach the use of Nextel material in furnaces, Applicant respectfully submits that for the reasons presented above, Claims 6-7 and 11-12 are patentable over the applied art.

In view of the foregoing discussion, applicant respectfully submits that the pending claims are allowable over the cited prior art. Allowance of the claims is therefore respectfully solicited.

330,000

Respectfully submitted,



Alan B. Clement
Reg. No. 34,563

MAILING ADDRESS

HEDMAN & COSTIGAN, P.C.
1185 Avenue of the Americas
New York, NY 10036
(212) 302-8989



STABLE AND LIGHT
696-250 BRANCH

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT OPERATION

2004 MAY 28 PM 2:25

In re Application of:

John Brewer et al.

Serial No.: 09/493,350

Group Art Unit: 1764

Filed : January 28, 2000

Examiner : H. Tran

For : MULTI-ZONE CRACKING FURNACE

New York, NY 10036

May 19, 2004

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PETITION FOR EXTENSION OF TIME (37 C.F.R. 1.136(a))

Sir:

Request is hereby made for the following
indicated extension of time for filing of the accompanying papers:

☐ One month.

Fee in the amount of ___ \$110.00 ___ \$55.00 is enclosed.

☐ Two months.

Fee in the amount of ___ \$420.00 ___ \$210.00 is enclosed.

☒ Three months.

Fee in the amount of X \$950.00 ___ \$460.00 is enclosed.

☐ Four months.

Fee in the amount of ___ \$1,480.00 ___ \$740.00 is enclosed.

☐ Five months.

Fee in the amount of ___ \$2,010.00 ___ \$1005.00 is enclosed.

STATUS AND ENTITY
BRANCH

[] A check in the amount of \$ 950.00 is enclosed to cover the fee. MAY 23 PM 2: 25
[X] The Commissioner is hereby authorized to charge any additional fee which
may be required or credit any overpayment to Deposit Account No. 08-1540. A duplicate
copy of this sheet is enclosed.

Respectfully submitted,



Alan B. Clement
Reg. No. 34,563

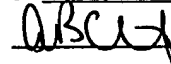
MAILING ADDRESS

Hedman & Costigan, P.C.
1185 Avenue of the Americas
New York, NY 10036
(212) 302-8989

I hereby certify that this correspondence is being
deposited with the United States Postal Service as first
class mail in an envelope addressed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

on May 19, 2004



Alan B. Clement, Reg. No. 34,563